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UTILITY PATENT APPLICATION TRANSMITTAL

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ADDRESS TO: Assistant Commissioner for Patents
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Washington, D. C. 20231

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. X Fee Transmittal Form
(Submit an original, and a duplicate for fee processing)
2. X Specification (Total Pages 19)
(preferred arrangement set forth below)
 - Descriptive Title of the Invention
 - Cross References to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claims
 - Abstract of the Disclosure
3. X Drawings(s) (35 USC 113) (Total Sheets 6)
4. X Oath or Declaration (Total Pages 6)
 - a. Newly Executed (Original or Copy)
 - b. Copy from a Prior Application (37 CFR 1.63(d))
(for Continuation/Divisional with Box 17 completed) (**Note Box 5 below**)
 - i. DELETIONS OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
5. Incorporation By Reference (useable if Box 4b is checked)
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. Microfiche Computer Program (Appendix)

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jc525 U.S. PTO

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667227 00102460

7. ☐ Nucleotide and/or Amino Acid Sequence Submission
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United States Patent Application
For

DEFAULT SOURCE SETUP FOR CHANNEL NUMBERS

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DEFAULT SOURCE SETUP FOR CHANNEL NUMBERS

FIELD OF THE INVENTION

The present invention is directed to a system and method that receives
5 television programs from multiple sources. More particularly, the present
invention is directed to a system and method for programming channel
numbers to a default source.

BACKGROUND OF THE INVENTION

10 Within the past decade, the variety of sources for providing television
programs have increased dramatically. Today television programs are
transmitted using analog or digital signals through airwaves, cable, and
satellites. As such, a user is capable of tuning to stations providing television
programs that may originate from multiple sources through a receiver or set-
15 top box. For example, a user may have set-top box connected with a local
antenna to receive television programs broadcasted through the airwaves. The
set-top box may also receive television programs via a cable connection. In
addition, the set-top box may receive television programs through a satellite
system, for example, the RCA Direct Satellite System™ or DSS™ (Direct Satellite
20 System and DSS are trademarks of Hughes Communications, a division of
General Motors).

Because each source includes a number of stations for providing
television programs, the number of stations available to a user has increased
from one to hundreds of stations. For each station, there is a corresponding
25 channel number that is used to tune to the station. Consequently, the number
of channel numbers available to a user is limited. As a result, a user receiving

multiple sources for providing television programs may have a channel number that may tune to multiple stations from different sources. In such a case, the channel number is considered "over-lapping."

In prior systems, channel numbers, which may include over-lapping channel numbers, are designated to a default source based on which source the set-top box is configured to receive. That is, a user must press a switch or button on the set-top box to change the default source. Consequently, in such prior systems, the ability to select a default source is not seamlessly integrated and a user is unable to select easily a default source for programming channel numbers.

SUMMARY OF THE INVENTION

A system and method, which are seamlessly integrated, for allowing a user to select a default source to program channel numbers are disclosed. In one embodiment, the system provides a simple to use electronic system guide
5 that allows a user to select a default source to program over-lapping channel numbers to the default source. The system includes at least one channel number usable by a plurality of sources for providing a station to transmit television programs. The system generates the electronic system guide identifying the plurality of sources. The system allows a user to select one of
10 the plurality of sources as the default from the electronic system guide. The system programs the at least one channel number to tune to a station for receiving television programs provided by the selected default source.

In another embodiment, the system provides an electronic system guide that allows a user to select default sources to program automatically channel
15 numbers. The system allows a user to select a first default source to program channel numbers. The system determines if there are over-lapping channel numbers, which are usable by a plurality of sources. If there are no over-lapping channel numbers, the system programs the channel numbers to the selected first default source. If there are over-lapping channel numbers, the
20 system lists the plurality of sources that may use the over-lapping channel numbers. The system allows a user to select a second default source among the listed plurality of sources to program the over-lapping channel numbers. The system then programs the over-lapping channel numbers to tune to a station provided by the selected second default source and programs any non-over-
25 lapping channel numbers to tune to a station provided by the selected first default source.

BRIEF DESCRIPTION OF THE DRAWINGS

The objects, features, and advantages of the present invention will be apparent to one skilled in the art from the following detailed description in which:

5 **Figure 1** is a simplified block diagram illustrating one embodiment of the system of the present invention;

Figure 2 is a simplified block diagram of one embodiment of a set-top box that provides an electronic system guide in accordance with the teachings of the present invention;

10 **Figure 3** is a flow chart illustrating one embodiment of the process for providing a default source to program channel numbers;

Figure 4 is flow chart illustrating one embodiment of the process for providing default sources to program automatically channel numbers;

15 **Figure 5** illustrates one exemplary graphical user interface pop-up window for an electronic system guide that enables a user to select a source for programming over-lapping channel numbers; and

Figure 6 illustrates one exemplary graphical user interface pop-up window for an electronic system guide that enables a user to select a source for programming over-lapping channel numbers.

DETAILED DESCRIPTION

In the following description, for purposes of explanation, numerous details are set forth in order to provide a thorough understanding of the present invention. However, it will be apparent to one skilled in the art that these
5 specific details are not required in order to practice the present invention. In other instances, well known electrical structures and circuits are shown in block diagram form in order not to obscure the present invention unnecessarily.

The system of the present invention provides a seamlessly integrated and simple to use electronic system guide to select a default source to program
10 channel numbers. The electronic system guide is displayed to a user as a graphical user interface. The graphical user interface allows a user to select easily a default source for programming channel numbers. The electronic guide also allows a user to select a default source for programming over-lapping channel numbers. A simplified block diagram of the system is illustrated in
15 **Figure 1.** Referring to **Figure 1**, system 100 includes a set-top box 105, television 120, remote controller 130, and a plurality of programming sources 1 (110) through N (114).

Set-top box 105 is a receiver of television signals for television 120. Set-top box 105 is configured to receive television signals from programming
20 sources 1 (110) through N (114). For example, programming sources 1 (110) through N (114) may be local TV antenna source, cable source, or a satellite source that transmit signals to set-top box 105 through a local antenna, cable connection, and satellite system, such as, for example, the DSS™ system. Set-top box may receive digital or analog signals from programming sources 1 (110)
25 through N (114) through the local antenna, cable connection, and satellite system. Each programming source also includes a number of stations that

transmit television programs using a television signal for a specific channel utilized by television 120. Set-top box 105 is also configured to program channel numbers for television 120 to tune to a station for receiving television programs provided by one of programming sources 1 (110) through N (114).

5 Set-top box 105 is also configured to generate system guide 101 on display 125 of television 120. System guide 101 is a graphical user interface to provide a user the capability to configure the system. For example, system guide 101 may provide a number of options for a user to select, such as, for example, a local station setup that allows a user to select a default source in
10 programming channel numbers for television 120 to tune to stations provided by the selected default source. For example, a user can select programming source 1 (110) as a default source to program the channel numbers. Although the set-top box 105 is illustrated as a separate device coupled between television 120 and programming source 1 (110) through programming source N (114), it is
15 apparent that its functionality may be incorporated in other devices including television 120.

 System guide 101 also provides an auto-program pop-up 102. Auto-program pop-up 102 is pop-up menu or sub-menu within system guide 101 that provides a user the option to program automatically ("auto-program") the
20 channel numbers for television 120 and to determine if there are over-lapping channel numbers. Over-lapping channel numbers are channel numbers that may be used by a plurality of programming sources. For example, programming source 1 (110) and programming source 2 (112) may both provide a station that tunes to channel number 100. In such a case, channel number 100
25 is over-lapping. If there are over-lapping channel numbers, auto-program pop-up 102 provides a user the capability to select a default source for the over-

lapping channel numbers. After a user selects a default source, the overlapping channel numbers are programmed by the set-top box 105 to tune to a station provided by the selected default source.

Remote controller 130 is a control device for a user to provide inputs to television 120 and set-top box 105. Remote controller 130 includes input pad 132 that may have alpha-numeric keys, options keys, function keys, and other like keys to operate set-top box 105 and television 120. Typically, input pad 132 includes a menu key that displays a system menu having an option for system guide 101 or the input pad 132 may have a separate key to access directly system guide 101.

Figure 2 is a simplified block diagram of one embodiment of a set-top box 105 in **Figure 1**. Referring to **Figure 2**, set-top box 105 includes a processor 101, selector 103, interface 108, and memory 102. Processor 101 is coupled with selector 103, memory 102, and interface 108. Selector 103 receives inputs from programming source 1 (110) through N (114) and outputs a selected television signal based on one of the inputs to interface 108. Interface 108 couples processor 101 and selector 103 with television 120.

Memory 102 stores system guide program 104 and auto-program 106. Memory 102 may store other programs such as, for example, a programming guide. Memory 102 may include, for example, read only memory (ROM), random access memory (RAM), flash memory, or any other suitable memory. System guide program 104 is executable instructions used by processor 101 to generate an electronic system guide such as system guide 101 on display 125 of television 120. System guide program 104 may also include executable instructions used by processor 101 to program channel numbers for television

120 to tune to a station provided by a selected input of selector 103 as a default source.

In one embodiment, system guide 101 includes a local station setup option that allows a user to program channel numbers for television 120.

- 5 Within local station setup, system guide 101 may provide an "auto-program" option to program automatically ("auto-program") the channel numbers for television 120. Thus, auto-program 106 is executable instructions used by processor 101 to generate auto-program pop-up 102 that allows a user to select a default source to auto-program the channel numbers for television 120. Auto-
- 10 program 106 may also include executable instructions used by processor 101 to instruct selector 103 to select a specified input to derive an output television signal to television 120 through interface 108. For example, auto-program 106 generates auto-program pop-up 102 to allow a user to select a first default source among one of programming sources 1 (110) through N (114) to auto-
- 15 program the channel numbers for television 120. Auto-program 106 may also be used to determine if there are over-lapping channel numbers. If there are no over-lapping channel numbers, auto-program 106 may be used to auto-program the channel numbers to tune to a station provided by the first selected default source. If there are over-lapping channel numbers, auto-program 106
- 20 may be used to list the plurality of sources that may use the over-lapping channel numbers and allow a user to select a second default source among the listed plurality of sources to auto-program the over-lapping channel numbers. Auto-program 106 may be used to auto-program the over-lapping channel numbers to tune to a station provided by the selected second default source and
- 25 auto-program any non-over-lapping channel numbers to tune to a station provided by the selected first default source.

Processor 101 is the central processing unit for set-top box 105. Processor 101 is responsible for generating system guide 101 and auto-program pop-up 102 and to control selector 103. Processor 101 is also responsible for processing instruction code contained within system guide program 104 and auto-program 106 within memory 102. Processor 101 may also be responsive to inputs by a user. For example, a user may initiate the system guide 101 by pressing specified keys on input pad 132 of remote controller 130. If a user initiates system guide 101, processor 101 will then execute system guide program 104 to generate a graphical user interface on display 125 to the user.

Figure 3 is a flowchart illustrating one embodiment of the process for programming channel numbers for television 120. At step 310, a user powers on television 120. At step 320, a user selects a menu key on input pad 132 of remote controller 130. A graphical user interface having a menu appears on display 125 listing options for a user to select such as, for example, a "System Guide" option. At step 330, the user using remote controller 130 selects the system guide option that displays system guide 101 on display 125. System guide 101 may display other options such as, for example, a local station set-up option. At step 340, the user using remote controller 130 selects the local station set-up option for programming the channel numbers to television 120. System guide 101 may display an option such as, for example, an "Auto-Program" option to auto-program channel numbers for television 120. At step 350, the user using remote controller 130 selects the auto-program option that displays auto-program pop-up 102 on display 125. The user can then select a default source among programming sources 1 (110) through N (114) to auto-program the channel numbers for television 120 to tune to a selected default source.

Figure 4 is a flowchart illustrating one embodiment of the process for the auto-program option. At step 355, auto-program pop-up 102 is displayed to provide a user a list of sources to select as a first default source. For example, a user may select a cable source, local TV antenna source, or a satellite source as a first default source to program channel numbers for television 120 to tune to a station provided by the selected first default source. The user using remote controller 130 selects a first default source among the listed sources. At step 360, processor 101 within set-top box 105 determines if there are over-lapping channel numbers for television 120. At step 365, if there are over-lapping channel numbers the process continues at step 375 otherwise the process continues to step 370.

If there are over-lapping channel numbers, at step 375 processor 101 generates a menu listing sources for the user to select as a second default source that provide stations to the over-lapping channel numbers. For example, a user may select a cable source, local TV antenna source, or a satellite source as a second default source to program the over-lapping channel numbers for television 120 to tune to a station provided by the selected second source. At step 380, a user selects a second default source to auto-program the over-lapping channel numbers. At step 385, processor 101 executes auto-program 106 to auto-program the over-lapping channel numbers to the selected second source and any non-over-lapping channel numbers to the selected first default source. At step 390, If there are no over-lapping channel numbers processor 101 executes auto-program 101 to auto-program the channel numbers for television 120 to tune to stations provided by the selected first default source.

Figure 5 illustrates one exemplary graphical user interface for an auto-program pop-up for the electronic system guide. Referring to Figure 5, the

auto-program pop-up window is for a cable source and satellite source overlap. The pop-up allows a user to select a default source for channel numbers 100-125, which may be used by both a cable and satellite source. For example, if a user selects the satellite source that is highlighted, auto-program will program channel numbers 110-125 to tune to a station provided by the satellite source.

Figure 6 illustrates one exemplary graphical user interface for an auto-program pop-up for the electronic system guide. Referring to **Figure 6**, the auto-program pop-up window is for a local TV antenna source and satellite source overlap. The pop-up allows a user to select a default source for channel numbers that be assigned to both local and satellite stations. For example, if a user selects the satellite source that is highlighted, auto-program will program the channel numbers to be assigned to the satellite stations.

Thus, a system and method, which are seamlessly integrated, for allowing a user to select easily a default source to program channel numbers have been provided. Although the present invention has been described with reference to specific exemplary embodiments, it will be evident that various modifications and changes may be made to these embodiments without departing from the broader spirit and scope of the invention as set forth in the claims. Accordingly, the specification and drawings are to be regarded in an illustrative rather than a restrictive sense.

CLAIMS

What is claimed is:

1 1. A method for providing a default source to at least one channel number
2 usable by a plurality of sources for providing a station to transmit television
3 programs, the method comprising:

4 generating an electronic system guide identifying the plurality of
5 sources;

6 selecting one of the plurality of sources as the default source from the
7 electronic system guide; and

8 programming the at least one channel number to tune to a station for
9 receiving television programs provided by the selected default source.

1 2. The method of claim 1, further comprising:

2 generating a menu listing a satellite source and a cable source for a user
3 to select such that the at least one channel number tunes to a station for
4 receiving television programs provided by a selected one of the satellite source
5 and cable source.

1 3. The method of claim 1, further comprising:

2 generating a menu listing a local TV antenna source for and a satellite
3 source for a user to select such that the at least one channel number tunes to a
4 station for receiving television programs provided by a selected one of the local
5 TV antenna source and satellite source.

1 4. The method of claim 1, wherein the television programs are transmitted
2 using one of an analog signal and a digital signal.

1 5. A system for providing a default source to at least one channel number
2 usable by a plurality of sources providing a station to transmit television
3 programs, comprising:

4 a processor configured to generate an electronic system guide
5 identifying the plurality of sources; and

6 a selector selecting one of the plurality of sources in accordance with a
7 user selecting one of identified plurality of sources as a default source from the
8 electronic system guide such that the at least one channel number is configured
9 to tune to a station for receiving television programs provided by the selected
10 default source.

1 6. The system of claim 5, wherein the processor is also configured to
2 generate a menu listing a satellite source and a cable source for a user to select
3 such that the at least one channel number tunes to a station for receiving
4 television programs provided by a selected one of the satellite source and cable
5 source.

1 7. The system of claim 5, wherein the processor is also configured to
2 generate a menu listing a local TV antenna source and a satellite source for a
3 user to select such that the at least one channel number tunes to a station for
4 receiving television programs provided by a selected one of the local TV
5 antenna source and satellite source.

1 8. The system of claim 5, wherein the television programs are transmitted
2 using one of an analog signal and a digital signal.

1 9. An article of manufacture including one or more computer readable
2 media with executable instructions therein, which, when executed by a
3 processing device causes the processing device to:
4 generate an electronic system guide listing a plurality of sources for a
5 user to select as a default source for at least one channel number usable by the
6 plurality of sources; and
7 program the at least one channel number to tune to a station for
8 receiving television programs provided by a selected default source.

1 10. The article of manufacture of claim 9, further comprising executable
2 instructions that when executed, cause the processing system to generate a
3 menu listing a satellite source and a cable source for a user to select such that
4 the at least one channel number tunes to a station for receiving television
5 programs provided by a selected one of the satellite source and cable source.

1 11. The article of manufacture of claim 9, further comprising executable
2 instructions that when executed, cause the processing system to generate a
3 menu listing a local TV antenna source and a satellite source for a user to select
4 such that the at least one channel number tunes to a station for receiving
5 television programs provided by a selected one of the local TV antenna source
6 and satellite source.

1 12. A method for providing a default source to channel numbers, the
 2 method comprising:
 3 selecting a first default source to program channel numbers;
 4 determining if there are over-lapping channel numbers, the over-lapping
 5 channel numbers being usable by a plurality of sources; and
 6 if there are over-lapping channel numbers,
 7 listing the plurality of sources that may use the over-lapping
 8 channel numbers,
 9 selecting a second default source among the listed plurality of
 10 sources to program the over-lapping channel numbers, and
 11 programming the over-lapping channel numbers to tune to a
 12 station for receiving television programs provided by the selected second
 13 source and program any non-over-lapping channel numbers to tune to a station
 14 for receiving television programs provided by the selected first source.

1 13. The method of claim 12, further comprising:
 2 if there are no over-lapping channel numbers,
 3 programming the channel numbers to tune to a station for
 4 receiving television programs provided by the selected first source.

1 14. The method of claim 12, wherein selecting a first source selects one of a
 2 local TV antenna source, cable source, and satellite source.

1 15. The method of claim 12, wherein selecting a second source selects one of
 2 a local TV antenna source, cable source, and satellite source.

1 16. A system for providing a default source to channel numbers, comprising:
2 a processor configured to generate an electronic system guide
3 identifying a plurality of first default sources; and
4 a selector configured to select one of the plurality of first default sources
5 in accordance with a user selecting one of the first default sources from the
6 electronic system guide such that the channel numbers tune to a station for
7 receiving television programs provided by the selected first default source.

1 17. The system of claim 16, wherein the processor is also configured to
2 determine if there are over-lapping channel numbers, and if there are over-
3 lapping channel numbers, listing a plurality of second default sources that may
4 use the over-lapping channel numbers.

1 18. The system of claim 17, wherein the selector is also configured to select
2 one of the second default sources such that the over-lapping channel numbers
3 tune to a station for receiving television programs provided by the selected
4 second default source.

1 19. The system of claim 17, wherein the selected first default source is one of
2 a local TV antenna source, cable source, and satellite source.

1 20. The system of claim 17, wherein the selected second default source is one
2 of a local TV antenna source, cable source, and satellite source.

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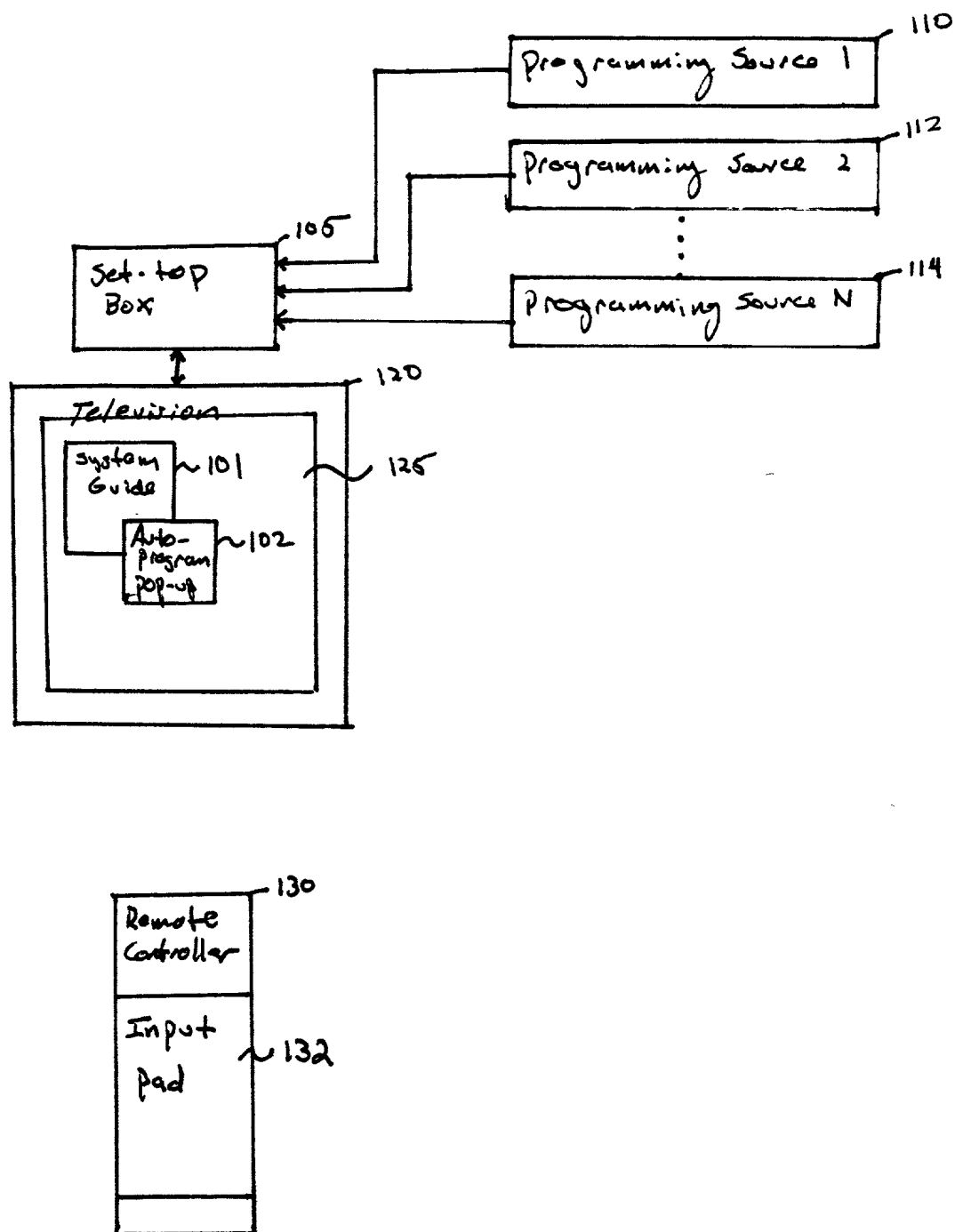
- 1 21. An article of manufacture including one or more computer readable
- 2 media with executable instructions therein, which, when executed by a
- 3 processing device causes the processing device to:
- 4 select a first default source to program channel numbers;
- 5 determine if there are over-lapping channel numbers, the over-lapping channel
- 6 numbers being usable by a plurality of programming sources; and
- 7 if there are over-lapping channel numbers,
- 8 list a plurality of second default sources,
- 9 select a second default source among the listed plurality of second
- 10 default sources to program the over-lapping channel numbers, and
- 11 program the over-lapping channel numbers to tune to a station
- 12 provided by the selected second default source and program any non-over-
- 13 lapping channel numbers to tune to a station provided by the selected first
- 14 default source.

ABSTRACT

A system and method for providing a default source to program channel numbers. In one embodiment, the system allows a user to program over-lapping channel numbers to a selected default source. The system includes at least one channel number usable by a plurality of sources for providing a station to transmit television programs. The system generates an electronic system guide identifying the plurality of sources. The system allows a user to select one of the plurality of sources from the electronic system guide as a default source. The system programs the at least one channel number to tune to a station for receiving television programs provided by the selected default source. In another embodiment, the system programs automatically channel numbers. The system allows a user to select a first default source to program channel numbers. The system determines if there are over-lapping channel numbers, which are usable by a plurality of programming sources. If there are over-lapping channel numbers, the system lists the plurality of programming sources. The system allows a user to select a second default source among the listed plurality of programming sources to program the over-lapping channel numbers. The system the programs the over-lapping channel numbers to tune to a station provided by the selected second default source and program any non-over-lapping channel numbers to tune to a station provided by the selected first default source.

Figure 1

100



66T22T-00102460

Figure 2

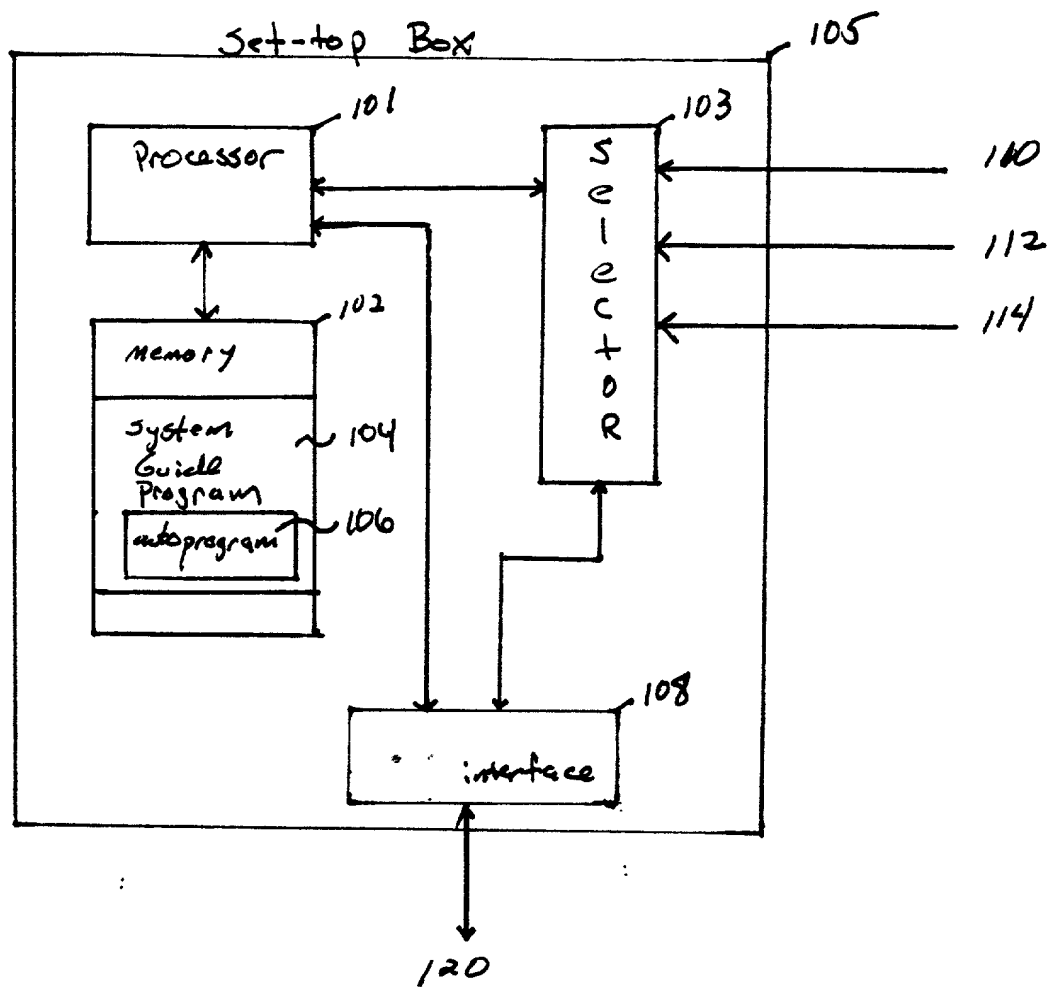


Figure 3

← 300

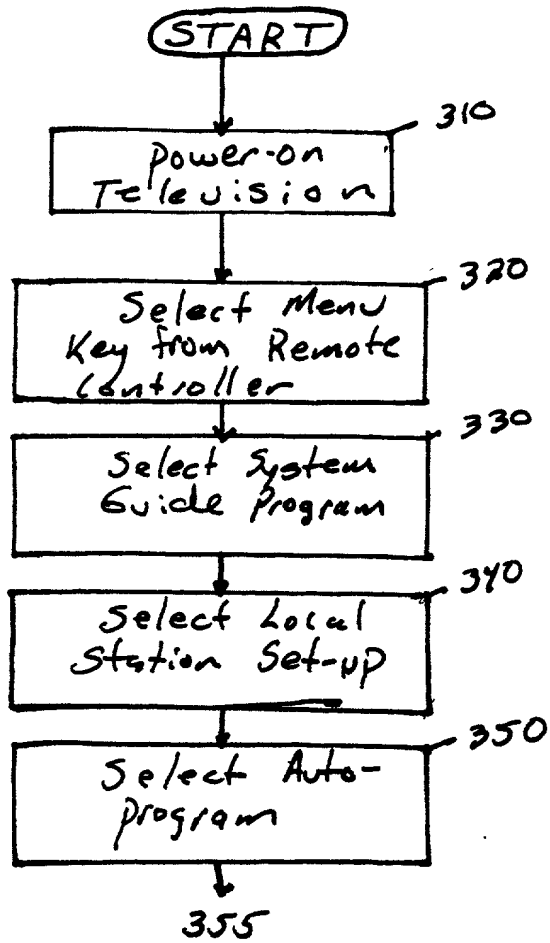
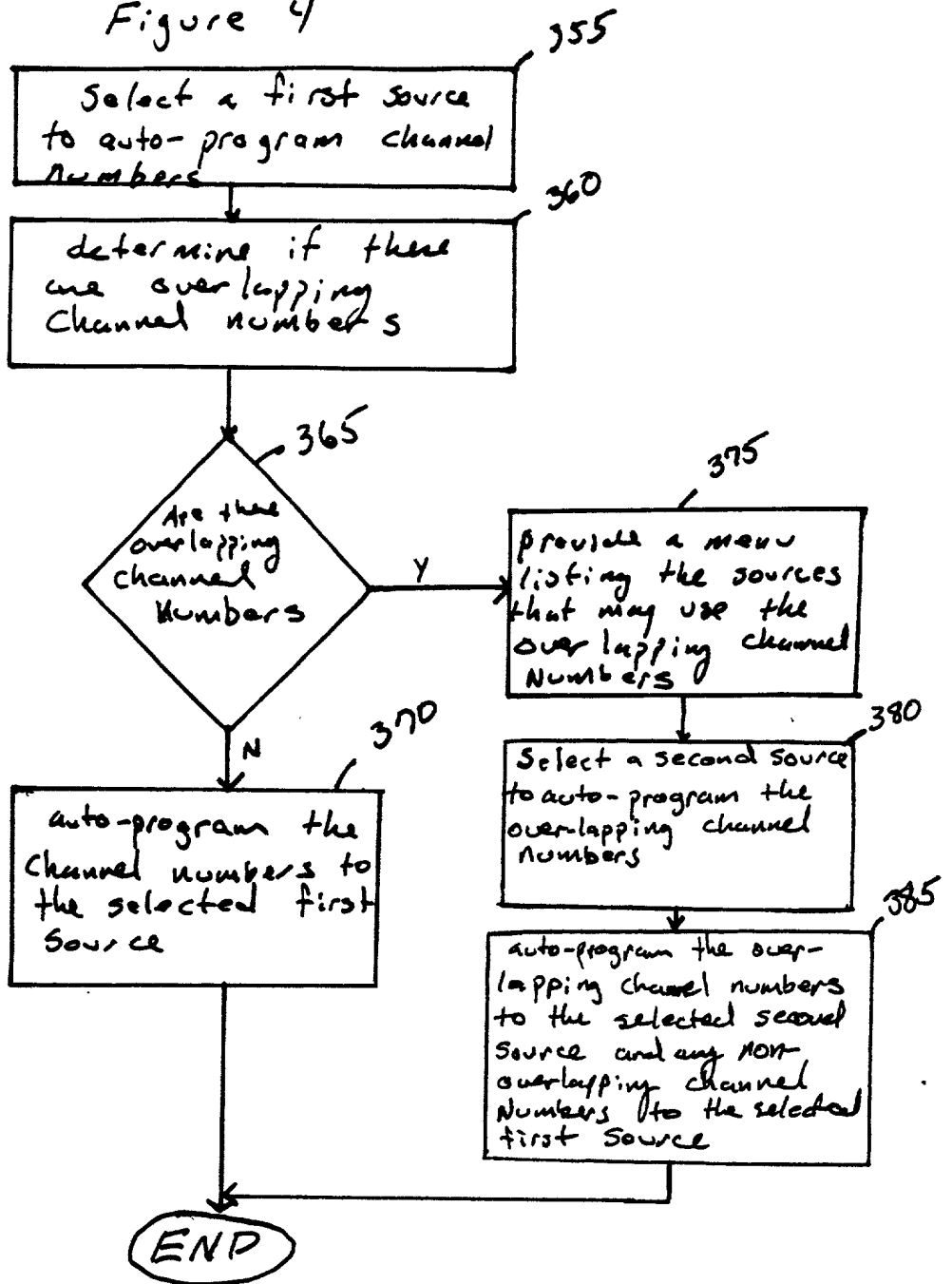


Figure 4



667221-00702460

Pop-up for Cable/Satellite overlap:

Auto Program2:22 MON 7:04pm

How do you receive local programs?

Default Station

☐ Channel numbers 100-125 may be assigned to both cable and satellite stations. Which type of program would you like the receiver to tune to when you enter these channel numbers?

Satellite

Cable

Return

Help

Figure 5

Pop-up for Local TV antenna/Satellite overlap:

Auto Program

2:22 MON 7:04pm

How do you receive local programs?

Default Station

☐

Some channel numbers may be assigned to both local and satellite stations. Which type of program would you like the receiver to tune to when you enter these channel numbers?

Satellite

Local

Return

Help

Figure 6

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Default Source Setup for Channel Numbers

the specification of which

X is attached hereto.
was filed on _____ as
United States Application Number _____
or PCT International Application Number _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claim(s), as amended by any amendment referred to above. I do not know and do not believe that the claimed invention was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months (for a utility patent application) or six months (for a design patent application) prior to this application.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

094701-199

Prior Foreign Application(s)

Priority
Claimed

(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

I hereby claim the benefit under title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below:

(Application Number)	Filing Date
(Application Number)	Filing Date

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Number)	Filing Date	(Status -- patented, pending, abandoned)
(Application Number)	Filing Date	(Status -- patented, pending, abandoned)

I hereby appoint the persons listed on Appendix A hereto (which is incorporated by reference and a part of this document) as my respective patent attorneys and patent agents, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

Send correspondence to Sanghui Michael Kim, BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP, 12400 Wilshire Boulevard 7th Floor, Los Angeles, California 90025 and direct telephone calls to Sanghui Michael Kim, (408) 720-8598.
(Name of Attorney or Agent)

06470100-123199
667221-00702460

Full Name of Fifth/Joint Inventor _____

Inventor's Signature _____ Date _____

Residence _____ Citizenship _____
(City, State) (Country)

Post Office Address _____

Full Name of Sixth/Joint Inventor _____

Inventor's Signature _____ Date _____

Residence _____ Citizenship _____
(City, State) (Country)

Post Office Address _____

Full Name of Seventh/Joint Inventor _____

Inventor's Signature _____ Date _____

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(City, State) (Country)

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APPENDIX A

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APPENDIX B

Title 37, Code of Federal Regulations, Section 1.56 Duty to Disclose Information Material to Patentability

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclosure information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) Prior art cited in search reports of a foreign patent office in a counterpart application, and
 - (2) The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.
- (b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made or record in the application, and
- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or
 - (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) Each inventor named in the application;
 - (2) Each attorney or agent who prepares or prosecutes the application; and
 - (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.
- (d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.